

AMENDMENTS TO THE CLAIMS

JC17 Rec'd PCT/PTO 10/533763  
04 MAY 2005

1. through 35. (canceled).

36. A method of removing contaminants from a contaminated gas or vapour stream, which method includes

- passing a contaminated gas or vapour stream through a bed of curled separating media in an upward direction;
- allowing a contaminant in the contaminated gas or vapour stream to collect on the separating media as the gas or vapour stream passes through the bed of separating media, thereby removing the contaminant from the gas or vapour stream and thus purifying the gas or vapour stream;
- allowing the contaminant that has collected on the separating media to pass from the separating media into a collection zone;
- removing the contaminant from the collection zone; and
- withdrawing a purified gas or vapour stream from the bed of separating media.

37. A method according to claim 36, wherein the thickness of the separating media bed is between 3 cm and 15 cm.

38. A method according to claim 36, wherein the curled separating media each have a dimension or length of between 3 mm and 30 mm; wherein the curled separating media are in the form of metal shavings; and wherein the shavings are less than 1 mm thick, and between 1 mm and 10 mm wide.

39. A method according to claim 36, wherein some or all of the curled separating media are of elongate form and comprise a plurality of full spirals, so that they are then each a spiral separating medium.

40. A method according to claim 39, wherein each spiral separating medium is of constant diameter along its length, with the spiral separating media being arranged in a regular fashion or pattern in the bed; wherein the spiral separating media extend parallel to one another in the bed, and the direction of movement or passage of the gas or vapour stream through the bed is orthogonally to the longitudinal axes of all the spiral separating media; wherein the bed comprises a plurality of layers of the spiral separating media, with each layer comprising a plurality of the separating media located adjacent each other, and with each layer of the separating media thus resting on the separating media of the layer below it; and wherein adjacent separating media in each layer are of opposite hand so that their spirals rotate or extend in opposite direction.

41. A method according to claim 36, wherein the gas or vapour stream is at an elevated temperature, with the contaminant being in condensable vaporized form and/or in the form of fine droplets entrained or dispersed in the gas or vapour stream.

42. A method according to claim 36, which includes passing the purified gas or vapor stream through a scrubber and/or biological filter to remove an undesired substance therefrom, before discharging the treated gas or vapour stream to atmosphere.

43. A method according to claim 36, wherein the contaminated gas or vapour stream passes linearly, in the upward direction, through the bed of separating media.

44. A method according to claim 43, wherein the linear velocity of the gas or vapour stream through the bed is up to 6 m/s.

45. Apparatus for removing contaminants from a contaminated gas or vapour stream, which apparatus includes

a gas/vapour chamber;

a gas/vapour inlet leading into the chamber;

a gas/vapour outlet leading from the chamber;

separating means located in proximity to the gas/vapour inlet, the separating means comprising a bed of curled separating media, with the separating means adapted such that a contaminated gas or vapour stream that enters the chamber passes through the bed of curled separating media in an upward direction, with the curled separating media acting to separate contaminants from the gas or vapour as the gas or vapour stream passes through the bed; and

collecting means for collecting contaminant that has collected on the separating media.

46. An apparatus according to claim 45, wherein the chamber is defined by a front wall, a rear wall spaced from the front wall, top and bottom walls, and a pair of spaced side walls located between the front, bottom, rear and top walls, with the gas/vapour inlet being provided in the front wall, while the gas/vapour outlet is provided in one of the other walls, and with the front wall sloping downwardly inwardly from the top wall to the bottom wall, so that it is thus inclined at an angle to the vertical.

47. An apparatus according to claim 46, wherein the front wall is planar; wherein the separating means comprises a holder which holds the separating media bed, with the holder comprising a base, a roof spaced from the base, and a pair of spaced sides between the roof and the base; wherein the base, roof and sides of the holder are in the form of plates, with the base, roof and side plates defining, at the front of the holder, a gas/vapour inlet opening, while a gas/vapour outlet opening is defined by the base, roof and side plates at the rear of the holder; and wherein the inlet and outlet openings are covered by apertured coverings which hold the separating media bed in position.

48. An apparatus according to claim 47, wherein the holder is releasably mounted in the gas/vapour inlet of the chamber, so that its plates extend transversely with respect to the chamber front wall and with it thus being located at an angle to the horizontal so that a contaminated gas/vapour stream that enters the gas/vapour inlet opening of the holder passes upwardly through the separating means before exiting through the gas/vapour outlet opening of the holder.

49. An apparatus according to claim 48, which includes mounting means mounting the holder releasably to a wall of the chamber; wherein the holder is provided, in proximity to its gas/vapour inlet opening, with an outwardly protruding flange which engages the front wall of the chamber around the gas/vapour inlet in the chamber front wall; and wherein the mounting means includes retaining means for retaining the holder flange in position against the chamber front wall.

50. An apparatus according to claim 47, wherein the collecting means comprises a trough located below the gas/vapour inlet opening of the holder of the separating means.

51. An apparatus according to claim 46, wherein the chamber forms part of an air collection hood located above cooking apparatus.

52. A holder/trough combination for an apparatus for removing contaminants from a contaminated gas or vapour stream, the combination including  
a holder for holding a separating media bed, the holder comprising a base plate, a roof plate spaced from the base plate, and a pair of spaced side plates between the roof and base plates, with the base plate, the roof plate and the side plate defining, at the front of the holder, a gas/vapour inlet opening, while a gas/vapour outlet opening is defined by the base plate, the roof plate and the side plates at the rear of the holder; and  
a trough located below the gas/vapour inlet opening of the holder.

53. A combination according to claim 52, wherein the trough comprises a base plate, a pair of spaced side plates and a front plate closing off the front edges of the base and side plates, with the base plate of the trough being fast with the base plate of the holder.

54. A combination according to claim 52, which includes a bed of curled separating media inside the holder.

55. A cooking installation which includes  
cooking apparatus on which foodstuffs can be cooked;  
apparatus for removing contaminants from a contaminated air stream according to claim 51 above the cooking apparatus;

an air extraction conduit leading from the air collection hood of the apparatus such that an inlet to the conduit is in communication with the gas/vapour outlet in one of the walls of the air collection hood; and

air extraction means in or associated with the extraction conduit.